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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/814,584	03/22/2001	Reed Gleason	KLR:1016.080	5474

7590 03/17/2003

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EXAMINER

CHANG, RICK KILTAE

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/814,584

Applicant(s)

GLEASON ET AL.

Examiner

Rick K. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-30 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,15,16,18,21,22 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4,7-14,17,19,20,23-26 and 28-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3-4,6-7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Species I and Species AA in Paper No. 9 is acknowledged. Claims 2-4, 7-14, 17, 19-20, 23-26, and 28-30 are elected, and claims 5-6, 15-16, 18, 21-22 and 27 are non-elected.

NOTE: Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;

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- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

- 4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

NOTE: Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

Claim Rejections - 35 USC § 102

- 5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 6. Claims 2-4, 8-9, 13-14, 17, 19-20, 23-24, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Schreiber et al (US 5,326,412).

Schreiber discloses in Fig. 2 a stainless steel substrate (22) with dimples 24 and 26 created using a punch; depositing and patterning with materials in Fig. 5; removing the substrate

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(22); 28 forms the opening as described in claims 17 and 19; 36 is nickel and electroplating layers; Fig. 5 shows flat surface incline; . It is inherent and evident that the punch used to form 24 and 26 is harder than the substrate and has a shaping portion with inclined sidewalls.

NOTE: Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schreiber et al (US 5,326,412) in view of Suzuki et al (US 6,351,885).

Schreiber fails to disclose providing a beam and a bump, a tail and a head with the tail thinner than the head, and a vertical stop to the tool.

Suzuki discloses providing a beam (last tip to the right in Fig. 11A) and a bump (second to last tip to the right in Fig. 11A), a tail (last tip to the left in Fig. 11A) and a head (one next to the last tip to the left in Fig. 11A) with the tail thinner than the head, and a vertical stop to the tool (16) thereby forming depressions to an exact depth with desired shapes.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Schreiber by providing a vertical stop to the tool, as taught by Suzuki, for the purpose of forming depressions to an exact depth with desired shapes.

9. Claims 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schreiber et al (US 5,326,412) in view of Bhatt et al (US 6,268,016).

Schreiber fails to disclose planarizing the conductive material and polishing the substrate.

Bhatt discloses planarizing the conductive material (col. 7, line 65) and polishing the substrate (col. 6, lines 5-6) thereby providing a non-warped surface for subsequent deposition of material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Schreiber by planarizing the conductive material and polishing the substrate, as taught by Bhatt, for the purpose of providing a non-warped surface for subsequent deposition of material.

10. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schreiber et al (US 5,326,412) in view of Nakaso et al (US 4,902,551).

Schreiber fails to disclose roughening the conductive material.

Nakaso discloses roughening the conductive material thereby increasing adherence between two dissimilar materials.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Schreiber by roughening the conductive material, as taught by Nakaso, for the purpose of increasing adherence between two dissimilar materials.

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11. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schreiber et al (US 5,326,412) in view of Yoshizawa et al (US 5,145,552).

Schreiber fails to disclose forming crystal grain inclined surface.

Yoshizawa discloses forming crystal grain inclined surface (col. 10, lines 48-61) thereby increasing adhesion between two surfaces.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Schreiber by forming crystal grain inclined surface, as taught by Yoshizawa, for the purpose of increasing adhesion between two surfaces.

NOTE: Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

Conclusion

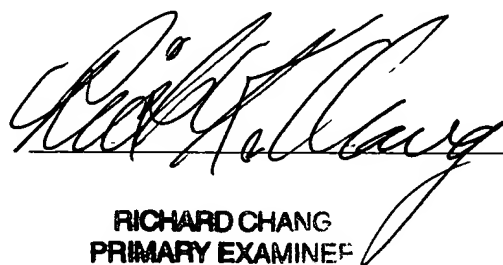
12. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (703) 308-4784. The examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Friday, except for maxi-flex day off (any one of working days).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



RICHARD CHANG
PRIMARY EXAMINER

RC
March 6, 2003